Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for obtaining an estimated motion vector for use in block-based video encoding, the method comprising:

refining a predicted motion vector for a current block to obtain an estimated motion vector in a sequence comprising a plurality of steps; and,

before each of a plurality of the steps in the sequence,

computing a similarity value between the block and another block indicated by the current estimated motion vector,

comparing the similarity value to a threshold, and

not performing subsequent steps in the sequence if the comparison indicates that the current estimated motion vector provides a match between the current block and the another block which is better than a match corresponding to the threshold

wherein:

refining the predicted motion vector comprises performing one or more frame motion estimation steps and, before the frame motion estimation steps, computing a first similarity value between the current block and a block identified by the predicted motion vector, comparing the first similarity value to a first threshold, and using the predicted motion vector as the estimated motion vector if the comparison indicates that the block identified by the predicted motion vector provides a better match than the first threshold;

the frame motion estimation steps comprise a low resolution frame motion estimation step and a full pel frame motion estimation step and the method comprises computing a second similarity value between the current block and a block identified by the estimated motion vector of the low resolution frame motion estimation step, comparing the second similarity value to a second threshold, and not performing the full pel frame motion estimation step if the comparison indicates that the block identified by estimated motion vector of the low resolution frame motion estimation step provides a better match than the second threshold; and,

the frame motion estimation steps comprise a half pel frame motion estimation step and the method comprises computing a third similarity value between the current block and a block identified by the estimated motion vector of the full pel frame motion estimation step, comparing the third similarity value to a third threshold, and not

performing the half pel frame motion estimation step if the comparison indicates that the block identified by estimated motion vector of the full pel frame motion estimation step provides a better match than the third threshold.

2. (Original) The method of claim 1 wherein the similarity measure is a sum of absolute differences.

3. (Original) The method of claim 1 comprising obtaining the predicted motion vector by computing a similarity measure between the block and each of a plurality of other blocks indicated by prior estimated motion vectors previously computed for a plurality of previously encoded nearby blocks and using as the predicted motion vector one of the prior estimated motion vectors for which the similarity measure indicates a best match for the current block.

4. (Original) The method of claim 3 wherein the similarity measure used in obtaining the predicted motion vector is a sum of absolute differences.

5. (Original) The method of claim 3 wherein the plurality of nearby blocks comprise a block immediately to the left of the current block, a block immediately above the current block and a block above and to the right of the current block.

6. (Original) The method of claim 5 wherein the plurality of nearby blocks comprise a block in the same position as the current block in an immediately preceding frame.

7. (Currently Amended) The method of claim 1 wherein refining the predicted motion vector comprises performing ~~one or more frame motion estimation steps followed by~~ one or more field motion estimation steps following the one or more frame motion estimation steps.

8. (Cancelled)

9. (Original) The method of claim 7 wherein the field motion estimation steps comprise a low resolution field motion estimation step, a full pel field motion estimation step and a half pel field motion estimation step.

10-12 (Cancelled)

13. (Currently Amended) The method of claim ~~12~~ 1 comprising computing a fourth similarity value between the current block and a block identified by the estimated motion vector of the frame motion estimation steps, comparing the fourth similarity value to a fourth threshold, and performing one or more field motion estimation steps if the comparison indicates that the block identified by estimated motion vector of the frame motion estimation steps provides a match poorer than the fourth threshold.

14. (Original) The method of claim 13 wherein the field motion estimation steps comprise a low resolution field motion estimation step and a full pel field motion estimation step and the method comprises computing a fifth similarity value between the current block and a block identified by the estimated motion vector of the low resolution field motion estimation step, comparing the fifth similarity value to a fifth threshold, and not performing the full pel field motion estimation if the comparison indicates that the block identified by estimated motion vector of the low resolution field motion estimation step provides a better match than the fifth threshold.

15. (Original) The method of claim 14 wherein the field motion estimation steps comprise a half pel field motion estimation step and the method comprises computing a sixth similarity value between the current block and a block identified by the estimated motion vector of the full pel field motion estimation step, comparing the sixth similarity value to a sixth threshold, and not performing the half pel field motion estimation step if the comparison indicates that the block identified by estimated motion vector of the full pel frame motion estimation step provides a better match than the sixth threshold.

16. (Previously Presented) The method of claim 15 comprising computing a seventh similarity value between the current block and a block identified by the estimated motion vector, comparing the seventh similarity value to a seventh threshold, and not performing a quantized DCT operation on the current block if the comparison indicates that the block identified by estimated motion vector provides a match better than the seventh threshold.

17-18 (Cancelled)

19. A program product comprising a medium carrying a set of computer-readable signals containing computer-executable instructions which, when run by a computer, cause the computer to execute the method of claim 1.

20-30 (Cancelled)